



## A new species of *Cerithiopsis* from Florida, USA (Prosobranchia, Cerithiopsidae)

### Un nuevo *Cerithiopsis* de Florida, EEUU (Prosobranchia, Cerithiopsidae)

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#### ABSTRACT

A new species of *Cerithiopsis* from Florida, USA, is described. The new species is compared with others of brown color previously known from the Caribbean Sea. Shell, protoconch, radula and operculum are figured.

#### RESUMEN

Se describe una nueva especie de *Cerithiopsis* de Florida, USA. Se compara la nueva especie con otras conocidas de concha castaña descritas para el Caribe. Se muestran concha, protoconcha, rádula y opérculo.

KEY WORDS: *Cerithiopsis*, new species, Florida.

PALABRAS CLAVE: *Cerithiopsis*, nueva especie, Florida.

#### INTRODUCTION

Since the works of ROLÁN AND ESPINOSA (1992a, 1992b, 1996) on the Caribbean *Cerithiopsis*, only REDFERN (2001) studied and figured numerous species of this group, also showing soft parts in some cases.

The family Cerithiopsidae is very rich in species (MARSHALL, 1978) but since most of them are very similar, specific differentiation is difficult. The number of species from the Caribbean and nearby areas has been estimated to be about one hundred (ROLÁN, ESPINOSA AND FERNÁNDEZ-GARCÉS, 2007). In this area, thirteen

species with brown teleoconch were studied (ROLÁN AND ESPINOSA, 1996).

It is evident that this group is little known for the time being. Here we present and describe a new species with brown shell from material obtained in Florida, USA.

#### MATERIAL AND METHODS

The material studied was collected at low tide and 1 m depth brushing stones with sponges.

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## RESULTS

### *Cerithiopsis krisbergi* spec. nov. (Figs. 1-14)

**Type material:** Holotype (Figs. 1, 2) in Florida Museum of Natural History (FLMNH), Gainesville, USA. Paratypes in the following collections: American Museum of Natural History (AMNH) (1); The Natural History Museum, London (BMNH) (1); Museum of Comparative Zoology, Harvard (MCZ) (1); Museo Nacional de Ciencias Naturales, Madrid (MNCN 15.05/47036) (1) (Figs. 3, 4); Muséum National d'Histoire Naturelle, Paris (MNHN) (1) (Fig. 6); United States National Museum, Washington (USNM) (1) (Fig. 5); collection of Emilio Rolán (CER) (6); collection of Marlo Krisberg (CMK) (12); collection of Raúl Fernández-Garcés (RFG) (3).

**Other material studied:** 4 specimens were destroyed for radular study; 3 juveniles. All from type locality.

**Type locality:** Sebastian Inlet, Brevard County, Florida, USA.

**Etymology:** After Marlo Krisberg, from Merritt Island, Florida, who collected all the material studied of this species.

**Description:** Shell (Figs. 1-6) small, with a clear ovoid form, rather solid, brownish. Protoconch (Figs. 7,8) white, with  $3\frac{1}{4}$  whorls which are apparently smooth, with only a very small cord, very close to the lower suture, visible between the last whorls. Under high magnification, on the first whorl (Fig. 9), numerous very short irregular discontinuous spiral lines can be seen. Teleoconch with four to five whorls, which begin with three spiral cords of similar size and equal rounded nodules, except on the upper cord of the last whorl where the nodules may be a little elongated axially. The whorls are hardly convex, the suture is indistinct. On the last whorl, there are two additional, slightly nodulous, spiral cords. At the end of the last whorl, the tubercles become more elongated axially on all the spiral cords. Except for the first teleoconch whorl which is yellowish, the color of the shell is brown to light brown with a darker band in the groove above the suture and as background of the first spiral cord of nodules below the suture, these nodules being lighter and pearly. For the last millimeter of growth of the body whorl lip the color disappears and the external lip is transparent to translucent in fresh collected specimens, but may turn white after a time. Aperture ovoid, siphonal canal short and open. Columella curved.

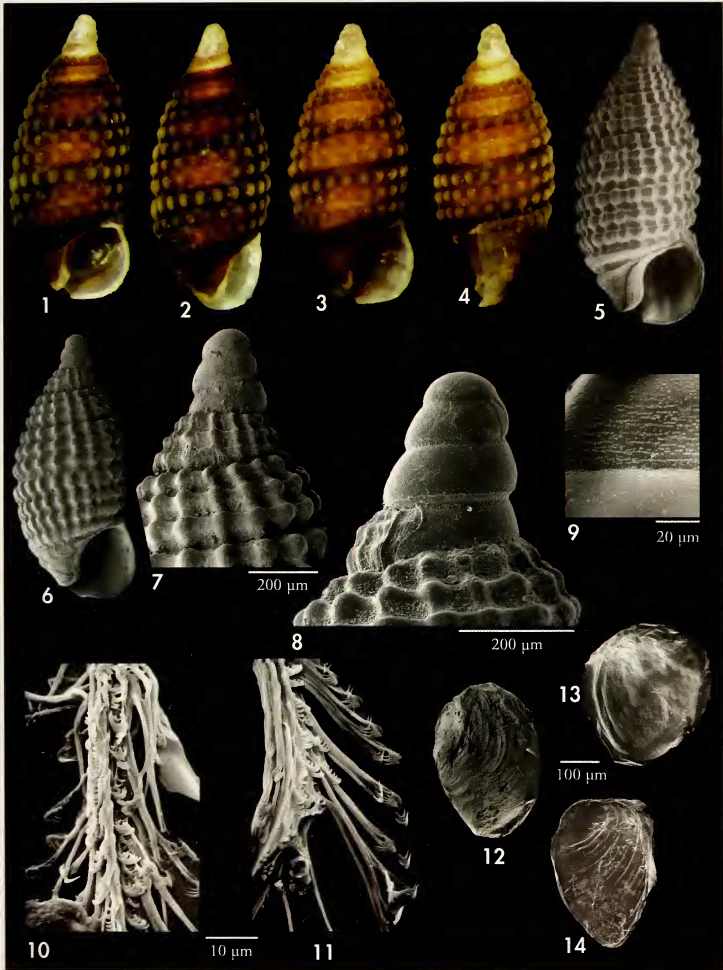
A fine periostracum is present mainly in the spaces between the nodules.

**Dimensions:** the holotype is 2.0 mm; most of the material studied is of similar size, but some paratypes reach 2.6 mm.

Animal white with a black V between and behind the eyes. Operculum (Figs. 12-14): ovoid, transparent, slightly yellowish, with the nucleus at one end, the external surface covered by several curved elevations. On the inner face, the insertion is elongate near the border and has two prolongations, occupying approximately half the surface.

**Radula** (Figs. 10, 11): very difficult to extract due to its being practically transparent; four specimens were dissolved for a radular study. The soft parts were observed under magnification in a solution of NaOH at 2%, and in three samples no radula was seen during all the process. In a fourth specimen, a radula was located with great difficulty. The radula is relatively short, with a probable formula 4-1-1-1-4. The central and lateral teeth are elongate, curved at the end and the cutting border has 7-9 elongate cusps. The marginal teeth are very much elongated, also curved near the end and with 5-7 very elongated-filiform cusps. This radula is similar to that of *C. prieguei* shown in ROLÁN AND ESPINOSA (1996).

**Distribution:** In addition to the material from the type locality, there is in the collection of Marlo Krisberg material of this species collected in Palm Beach Inlet, Palm Beach County, Ponce Inlet,



Figures 1-14. *Cerithiopsis krisbergi*. 1, 2: holotype, 2.0 mm (FLMNH); 3, 4: paratype, 2.0 mm (MNCN); 5: paratype, 2.3 mm, SEM photo (USNM); 6: paratype, 1.9 mm, SEM photo (MNHN); 7: protoconch of the paratype shown in Figure 6; 8: protoconch of a juvenile, paratype (CER); 9: detail of the protoconch of the paratype shown in Figure 5; 10, 11: radula; 12-14: opercula.

*Figuras 1-14. Cerithiopsis krisbergi*. 1, 2: holotipo, 2,0 mm (FLMNH); 3, 4: paratipo, 2,0 mm (MNCN); 5: paratipo, 2,3 mm, foto de MEB (USNM); 6: paratipo, 1,9 mm, foto de MEB (MNHN); 7: protoconcha del paratipo de la Figura 6; 8: protoconcha de un juvenil, paratipo (CER); 9: detalle de la protoconcha del paratipo de la Figura 5; 10, 11: rádula; 12-14: opérculos.

Volusia County and Port Canaveral. Harry G. Lee (Marlo Krisberg, pers. com.) has material from St. Augustine Inlet, St. Johns County. All material collected by Mr. Krisberg was brushed from the bottom of coral rocks or jetty rocks along and inside the inlets. It seems abundant on the Florida coast. It has not been found in any of the samples made over many years in Cuba.

*Remarks:* We know little about the radula and other anatomical characters of most Cerithiopsidae. For this reason, at present, we have not tried to separate the species described in this work at the generic level.

The genus *Joculator* Hedley, 1909, in which the present species could be included, is badly defined and many different groups of species have been included in it (LASERON, 1956). For this reason we prefer to continue using the genus name "*Cerithiopsis*" in a very broad sense.

*C. krisbergi* spec. nov. has a very characteristic short shell, very ovoid in profile, and with a smooth white protoconch. It must be differentiated from other numerous brown species in the Caribbean:

*C. greenii* (C. B. Adams, 1839) has a protoconch with less whorls; 2 cords at the beginning of the teleoconch, in the following whorl spirals 1-2 are closer; cord 1 has smaller tubercles, and the total number of teleoconch whorls is 7.

*C. fusiforme* (C. B. Adams, 1850) has a protoconch with 4 whorls and a cord in

the middle; the teleoconch has cords 1-2 almost fused in most of the whorls.

*C. pseudomovilla* Rolán and Espinosa, 1996 has a brown protoconch with only 2.2 whorls; the teleoconch is darker, cords 1-2 are closer, cord 2 has larger tubercles.

*C. iontha* Bartsch, 1911 has a protoconch of 2 whorls, with a cord at the end; spiral cords 1-2 are closer.

*C. vanhyningi* Bartsch, 1918 has a protoconch with 4 whorls, 2 spiral cords at the beginning of the teleoconch and cords 1-2 are closer.

*C. aimen* Rolán and Espinosa, 1996 has a protoconch with 3.5 whorls, but the teleoconch begins with 2 spiral cords. Later, cords 1-2 are closer; it has a larger shell which can have up to 6 whorls.

*C. prieguei* Rolán and Espinosa, 1996 has a protoconch with 1-2 spiral cords and 4 whorls, the beginning of the teleoconch has 2 cords and later cords 1-2 are closer.

Some species from other areas are similar, such as the following:

*Cerithiopsis micalii* (Cecalupo and Villari, 1997), from the Mediterranean has axial ribs on the protoconch and only two cords on the first whorl of the teleoconch.

*Cerithiopsis minima* (Brusina, 1865) from the Mediterranean, is larger and with a smooth protoconch.

*Cerithiopsis ridicula* (Watson, 1886) from North-east Australia, is smaller, the nodules on intersection are also smaller.

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